	Player 1 ►	1-away	2-away	3-away	4-away	5-away	6-away	7-away
Player 2 ▼	1-away	50%	25%	12.5%	6.25%	3.12%	1.56%	0.77%
	2-away	75%	50%	31.25%	18.75%	10.94%	6.25%	3.52%
	3-away	87.5%	68.75%	50%	34.38%	22.66%	14.45%	8.98%
	4-away	93.75%	81.25%	65.62%	50%	36.33%	25.39%	17.19%
	5-away	96.88%	89.06%	77.34%	63.67%	50%	37.70%	27.44%
	6-away	98.44%	93.75%	85.55%	74.61%	62.30%	50%	38.72%
	7-away	99.23%	96.48%	91.02%	82.81%	72.56%	61.28%	50%

Fair (50/50) Coin Toss Match Winning Chance Table

This table gives the respective chances of player 1 winning a coin toss match given a specific pair of away scores, from 1 to 7, between player 1 and player 2.

Each value in this coin toss match equity table is computed from the formula:

$$\frac{1}{2^{x+y-1}} \sum_{k=0}^{y-1} \binom{x+y-1}{k}$$

The formula gives the probability of the trailing player losing. The sum on the right side of the equation is the sum of the binomial coefficient from 0 to y-1. The factor y-1 is generated from the score of the trailing player minus 1. The factor x+y-1 results from the fact that at a certain away score, such as 9-away, 3-away, the maximum number of coin tosses that would be played until a player wins the match would be the sum of the away scores minus 1. For example, at a score of 9-away, 3-away, the maximum number of games cannot be 9+3=12, because there would be two winners if 12 coin tosses were played at that match score. Instead, a winner of the match is guaranteed by a maximum of 11 coin tosses. The binomial coefficient sum value is then divided by 2 to the (x+y-1) power. This indicates that the coin toss probability is ½ or 50%, and that the total number of possible games would be 2 to the (x+y-1) power. A more “literal” way of expressing the left-side multiplier would be (1/2)^(x+y-1).

For example, at a match score of 3-away, 5-away, the binomial coefficient would be (5+3-1=7 k) or (7 k). With a trailer score of 5-away, the (y-1) value would be 4. The sum of the binomial coefficient (7 k) from 0 to 4 would be 99. This would be divided by 2^7 or 2x2x2x2x2x2x2 or 128. 99/128=0.7734 probability of the trailing player losing. This yields a 77.34% chance of the trailing player losing, and a 100%-77.34%=22.66% chance of the trailing player winning.